

# BACKYARD RAIN GARDEN

### RAIN GARDEN SITE REQUIREMENTS

- 1. DISTANCE TO BUILDING FOUNDATION: \_\_\_\_\_ ( 10 FEET MINIMUM)
- 2. DISTANCE TO SEPTIC SYSTEM DRAINFIELD: \_\_\_\_\_ ( 25 FEET MINIMUM)
- 3. DISTANCE TO WELL HEAD: \_\_\_\_\_ ( 25 FEET MINIMUM)
- 4. UPSLOPE   DOWNSLOPE   FROM WELL HEAD ( CIRCLE ONE, DOWNSLOPE RECOMMENDED)
- 5. UPSLOPE   DOWNSLOPE   LATERAL   TO SEPTIC DRAINFIELD ( CIRCLE ONE, LATERAL RECOMMENDED)
- 6. SUN EXPOSURE IS   FULL   PARTIAL   ( CIRCLE ONE)
- 7. DEPTH TO SEASONAL HIGH WATER TABLE: \_\_\_\_\_ (> 30 INCHES RECOMMENDED)

### SOIL DATA

- 1. PREDOMINANT SOIL TYPE: \_\_\_\_\_ (FROM SOIL SURVEY)
- 2. POST RAINFALL CONDITION OF PROPOSED RAIN GARDEN LOCATION ACCORDING TO LANDOWNER:  
WET OR SATURATED 1.5 DAYS AFTER RAINFALL? \_\_\_\_\_ IF YES, SELECT ALTERNATE SITE.
- 3. DEPTH TO WETLAND SOILS IN 24-INCH DEPTH TEST PIT: \_\_\_\_\_ INCHES  
IF WETLAND SOILS (GREY WITH RIBBONS OF BROWN) ARE OBSERVED WITHIN 12 INCHES OF SURFACE, SITE IS UNSUITABLE FOR RAIN GARDEN.
- 4. IS WATER PRESENT IN TEST PIT, 2 DAYS AFTER COMPLETE FILLING WITH WATER?   YES   NO   (CIRCLE ONE)  
  
ANY WATER PRESENT WITHOUT ADDITIONAL RAINFALL INDICATES POORLY DRAINED SITE. IF PIT DRAINS COMPLETELY, REFILL AND CHECK AFTER 12 HOURS. A COMPLETELY DRAINED PIT CHARACTERIZES A WELL DRAINED SITE.

### RUNOFF VOLUME

TOTAL WATERSHED AREA (A) = \_\_\_\_\_ SQUARE FEET

AREA OF CONNECTED IMPERVIOUS SURFACES (Ai) = \_\_\_\_\_ SQUARE FEET

CONNECTED IMPERVIOUS PERCENTAGE OF WATERSHED (I) = (Ai/A)\*100= \_\_\_\_\_

RUNOFF COEFFICIENT (Rv) = 0.05 + (0.009 \*I) = \_\_\_\_\_

STORM PRECIPITATION (P): \_\_\_\_\_ (1.5 INCHES FOR CAMA COUNTIES, 1.0 INCH FOR ALL OTHERS)

RUNOFF VOLUME (V) = Rv \* A \* (P/12) = \_\_\_\_\_ CUBIC FEET\*\*

\*\* REFER TO **APPENDIX D** OF CCAP STORMWATER BMP DESIGN MANUAL FOR RAIN GARDEN SIZING CHARTS.

SITE MAP

SCALE: \_\_\_\_\_

NORTH CAROLINA  
SOIL&WATER  
CONSERVATION

FIELD OFFICE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_

LANDOWNER: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

REVISIONS			
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PROJECT #:	SCALE:
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SHEET NO. 1 OF 3	FILENAME: RAINGARDEN1.DWG



RAIN GARDEN SIZE

RAIN GARDEN PONDING DEPTH (Dp): \_\_\_\_\_ (3, 6 OR 9-INCHES RECOMMENDED)

SURFACE AREA = RUNOFF VOLUME (V) / PONDING DEPTH (FEET) = V/(Dp/12) = \_\_\_\_\_ SQUARE FEET

NOTE: BOTTOM OF RAIN GARDEN MAY HAVE VARYING DEPTHS IF WATER DRAINS FROM TEST PIT BETWEEN 12 AND 36 HOURS. GRADE BOTTOM WITH ZONES AT DIFFERENT ELEVATIONS TO IMPROVE SURVIVAL OF BIORETENTION PLANTS THAT CANNOT TOLERATE WET CONDITIONS FOR EXTENDED PERIODS. DETERMINE AVERAGE DEPTH TO CALCULATE REQUIRED SURFACE AREA. FOR EXAMPLE, 50% OF CELL HAS 9-INCH DEPTH AND 50% OF CELL HAS 6-INCH DEPTH; THE AVERAGE DEPTH IS 7.5-INCHES.

PEAK STORMWATER RUNOFF USING RATIONAL METHOD

C = RUNOFF COEFFICIENT = [(CONNECTED IMPERVIOUS AREA x 0.95) + ( PERVIOUS AREA x 0.25)] / DRAINAGE AREA= \_\_\_\_\_

I = STORM INTENSITY (10-YEAR STORM EVENT, 5-MINUTE DURATION) FROM TABLE 3.1 OF CCAP BMP DESIGN MANUAL = \_\_\_\_\_ INCHES/HOUR

A = WATERSHED AREA DRAINING INTO BMP = \_\_\_\_\_ ACRES

PEAK FLOW FROM WATERSHED DURING 10-YEAR STORM EVENT = **Q = C x I x A**

Q = PEAK FLOW = \_\_\_\_\_ CUBIC FEET PER SECOND

OUTLET WEIR DESIGN

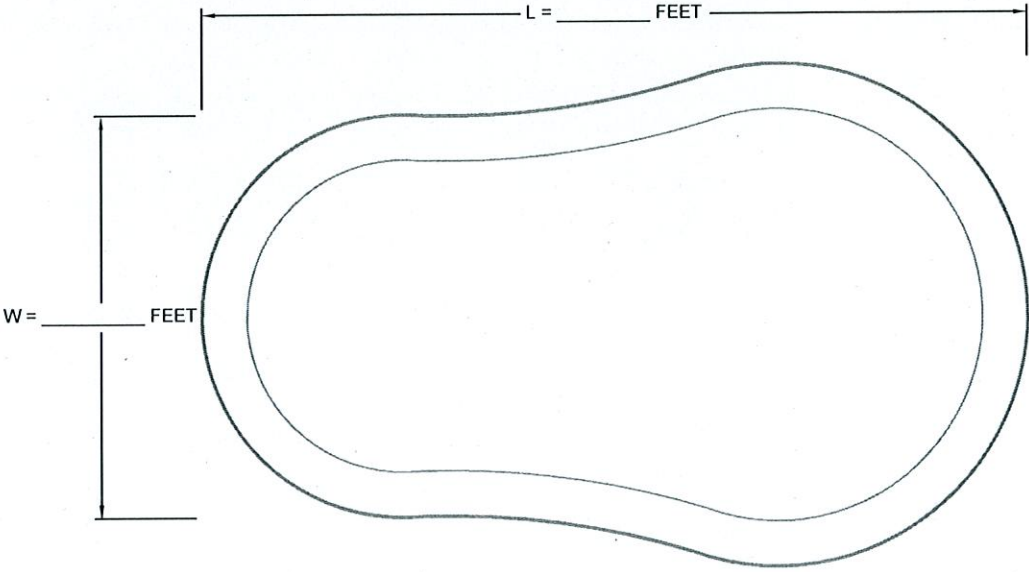
Cw = WEIR COEFFICIENT = 3.0

H = HEIGHT OF WATER OVER TOP OF WEIR = \_\_\_\_\_ FEET (0.5 FEET MAXIMUM)

Q = PEAK FLOW = \_\_\_\_\_ CUBIC FEET PER SECOND

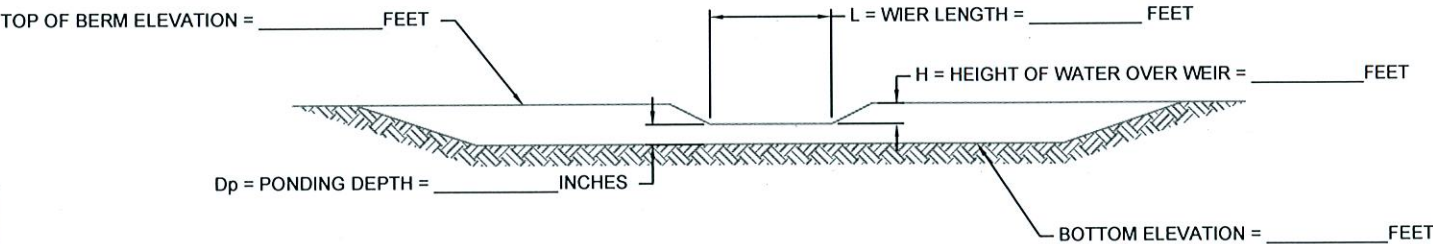
L = LENGTH OF WEIR = Q / (Cw x H ) = \_\_\_\_\_ FEET

NOTES:



NOTE: LOCATE ALL INLET AND OUTLET LOCATION(S)  
MARK ANY ZONES OF VARYING BOTTOM ELEVATIONS


PLAN  
NOT TO SCALE



CROSS SECTION  
NOT TO SCALE

WARNING:

LOCATE ALL UNDERGROUND UTILITIES BEFORE DIGGING. CALL 1-800-632-4949 FOR BURIED UTILITY LOCATION SERVICE.

	FIELD OFFICE: _____	LANDOWNER: _____	ADDRESS: _____	ADDRESS: _____	<table><tr><th colspan="5">REVISIONS</th></tr><tr><th>NO.</th><th>BY</th><th>DATE</th><th>DESCRIPTION</th></tr><tr><td>1</td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td></td><td></td><td></td><td></td></tr></table>	REVISIONS					NO.	BY	DATE	DESCRIPTION	1					2					3					4					5					PROJECT #: _____	SCALE: _____
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